

Claims

- [c1] 1. A wireless transmitting/receiving circulator circuit serving as a signal transmission/reception interface between a wireless device and an antenna such that signals falling within a first waveband are received and signals within a second waveband are transmitted, the circulator circuit comprising:
- a first band-pass filter coupled to a receiving end of the wireless device and the antenna for receiving signals from the antenna, filtering the signals to produce receiving signals and transmitting the receiving signals to the receiving end of the wireless device;
 - a filter coupled to the antenna for blocking signals falling within the second waveband picked up by the antenna; and
 - a second band-pass filter coupled to a transmitting end of the wireless device and the filter for receiving signals from the transmitting end, filtering the signals to produce transmitting signals and transmitting the transmitting signal via the antenna after passing through the filter.
- [c2] 2. The circulator circuit of claim 1, wherein the first

band-pass filter further comprises:
a low-pass filter coupled to the antenna; and
a high-pass filter coupled to the low-pass filter and the receiving end of the wireless device.

[c3] 3. The circulator circuit of claim 2, wherein the low-pass filter further comprises:
an inductor with one end coupled to the antenna; and
a capacitor with one end connected to a ground and another end coupled to another end of the inductor and the high-pass filter.

[c4] 4. The circulator circuit of claim 2, wherein the high-pass filter further comprises:
a capacitor with one end coupled to the low-pass filter;
and
an inductor with one end coupled to a ground and another end coupled to the other end of the capacitor and the receiving end of the wireless device.

[c5] 5. The circulator circuit of claim 1, wherein the filter further comprises:
a capacitor with one end coupled to the antenna; and
an inductor with one end connected to a ground and another end coupled to the other end of the capacitor.

[c6] 6. The circulator circuit of claim 1, wherein the second

band-pass filter further comprises:

a low-pass filter coupled to a transmitting end of the wireless device; and

a high-pass filter coupled to the low-pass filter and the filter.

[c7] 7. The circulator circuit of claim 6, wherein the low-pass filter further comprises:
an inductor with one end coupled to the transmitting end of the wireless device; and
a capacitor with one end connected to a ground and another end coupled to the other end of the inductor and the high-pass filter.

[c8] 8. The circulator circuit of claim 6, wherein the high-pass filter further comprises:
a capacitor with one end coupled to the low-pass filter;
and
an inductor with one end connected to a ground and another end coupled to another end of the capacitor.